Menlo Park Notebook #146 [N-79-02-20.2]

This notebook is undated but was probably used in 1880 or 1881. There are entries by Edison and probably by Charles P. Mott. The material was copied from other notebooks, which were probably used in patent interference cases. A number of entries give references to specific interference cases. Included are notes and drawings of carbon filament lamps, vacuum pumps, and dynamos. In some cases, a date has been assigned to material that was not dated in the original notebook. The book contains 284 numbered pages.

Blank pages not filmed: 18-19, 46-47, 78-79, 110-111, 142-284.

Missing page numbers: 129-130.

LIBRARY OF THE

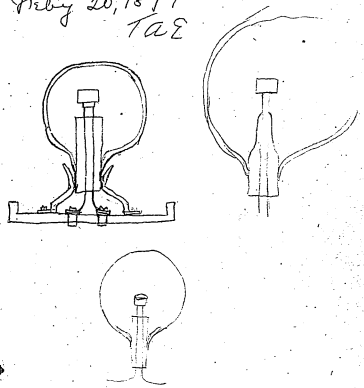
BOARD OF PATENT CONTROL,

120 BROADWAY, NEW YORK.

From Library
GENERAL ELECTRIC
44 Broad St N.Y.
May 1, 1896

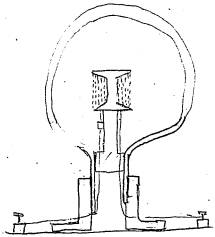
Vol 26, page 65

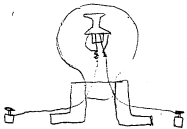
April 20, 1879
TAE



Vol. 20, page 1

Feb. 24, 1879



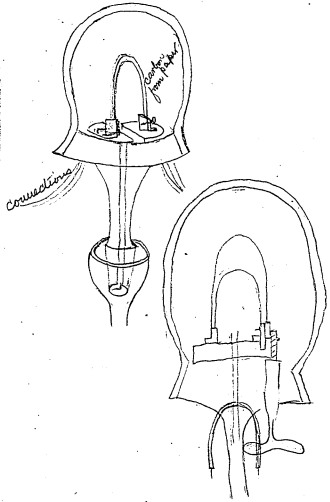


Vol 57 – page 1

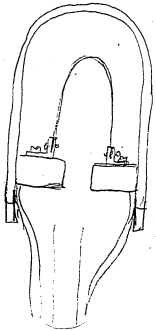
Mch 29, 1880

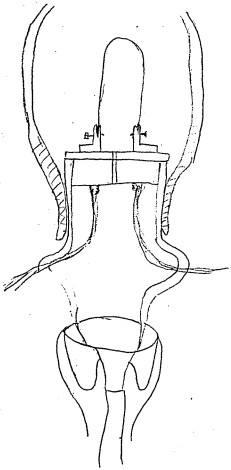
Carbonizing in Vacuo

Chas. 'Bat' Tilden.

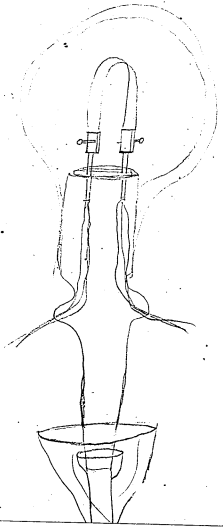


Vol 57, page 44



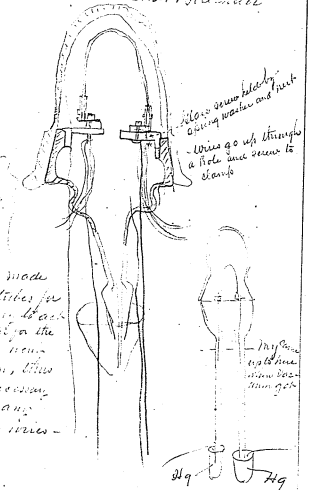


Vol 5-1 Page 9



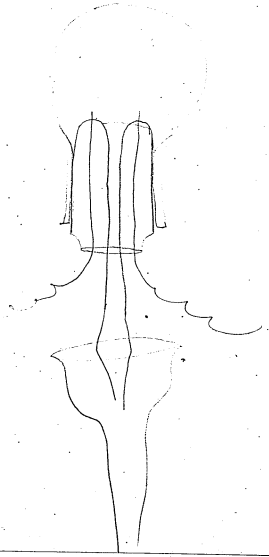
Carbonizing in Vacuum Mch. 29, 1880

Chas Batchelor



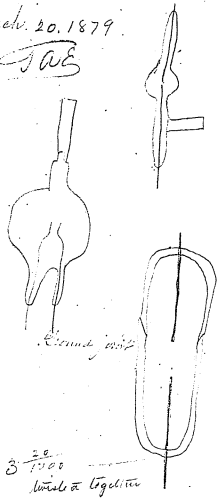
Made by
Batchelor
E. Bethune
C. Dean
M. Force

This was made with the tubes for the mercury to rise as condensed in the tube which were direct down, thus it was necessary to seal in one platinum wire.



March 20. 1879

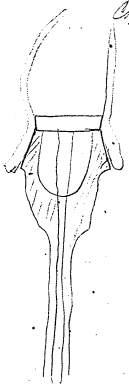
JAE



Vol 57 Page 83

March 30, 1880

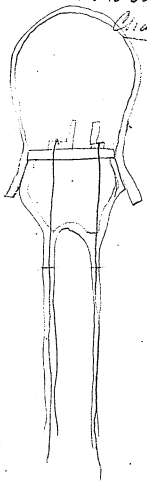
Chas Batchelor



Vol 57 Page 87

Mch 30, 1880

Chas J Barthelder



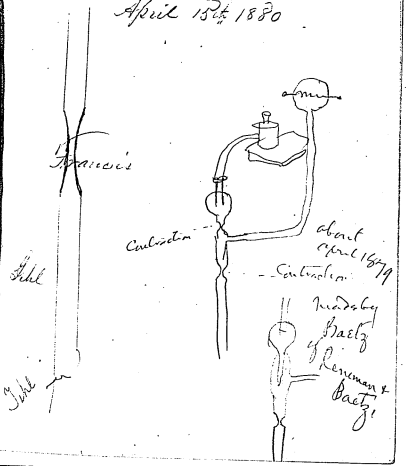
Vol 85 Page 97.

Drawing of a pump - dated Oct 25 1879 signed by S. D. Mott and T. A. Edison

Reference for Bohm Interferences
Combination integral with Mercury gauge tube.

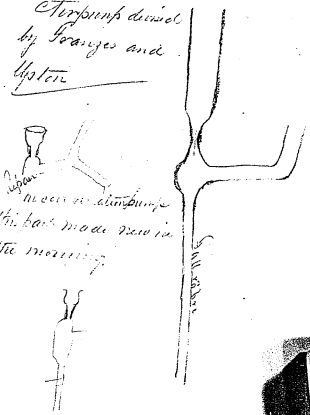
Book No 68. page 27.

April 13th 1880



April 16th 1880

Cleerpumps devised by Forsyes and Upston



Mercury air pump this book made new in the morning

= repaired

McLeod gauge broken on pump 4 marked 4.

Book 68.

Page 112

Sketch on page 113 shows a device of a Sponge pump in which the lead gauge tube and tail tube are one tube, Fig a shows first device. Fig 2 shows second device. Fig a was devised by Dr. Moses Medication shown in Fig 2 was devised by Böhme

April 20th 1850.

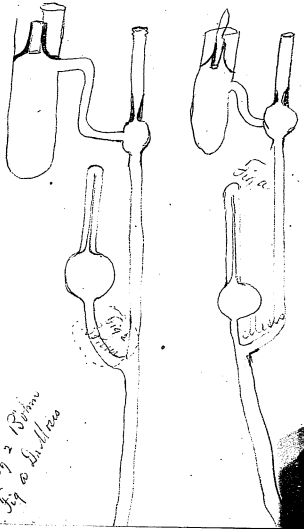
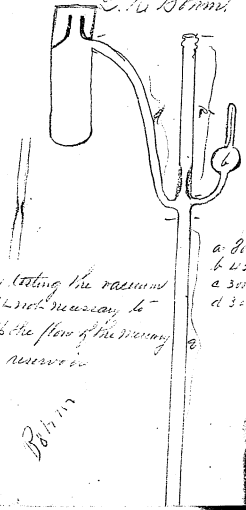


Fig 2 Böhme
Fig a Dr. Moses

No. 68 Page 45.

April 21st 1880

C. K. Behnke



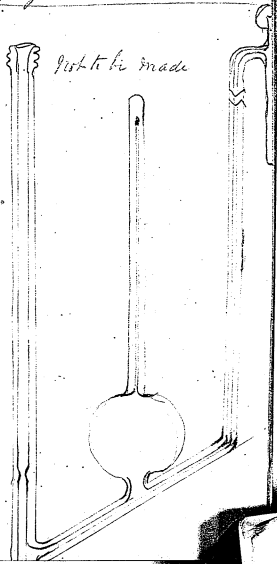
a. 200 m.m. long
b. 45 " " in diameter
c. 300 " " long
d. 30 " " "

for testing the vacuum is it not necessary to stop the flow of the mercury from the reservoir

Behnke

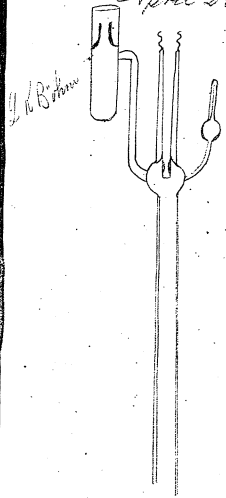
No. 68. page 49.

Dr. Moses Pistolet made



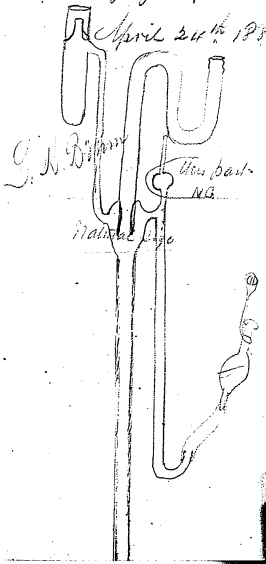
No. 68 page 58

April 23rd 1880



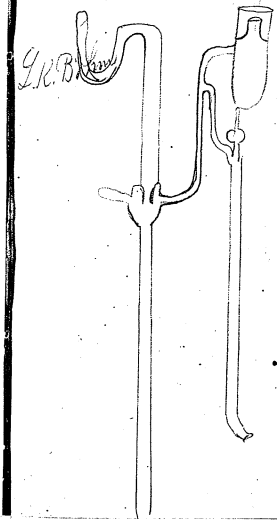
No. 68 page 57

April 24th 1880



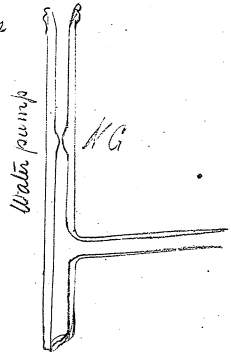
No. 68, page 63

April 26th 1880



No. 68. part of page 65

Lc closes



No. 85 pges 97 & 99

Has complete drawings of Mercury pumps marked respectively No. 3 & No. 4. In the latter the construction is shown and referred to in writing on opposite page by Mr Upton.

In also scrap books on Vac Apparatus

References for platé carbon.
(Weston vs Latimer vs. Edison

Note book No. 21 page 163 (part)

Coated bars of carbon with copper film deposited by electrolysis, then exposed to fumes of sulphur to convert the copper film into sulphide, by this means obtained bars of carbon coated with films of copper sulphide.

(Common writing, probably October, 78)

Book No. 41 page 141.

730	290	160	July 11	Large Corp copper plated on shaft of carbon

Book No 41 page 185.

800	226	Mch 6	6	Tri stamos [illegible] broke the carbon. High Vacuum. Small corp copper plate 015 Copper passed to 007

Book No 41 page 187.

No of Lamps	Before heating	After heating	Date	July	Notes
806	—	—	—		Small corp copper plated 015" Copper passed to 007 Broken in transmission
807	3011		Mch 6	6	Small Corp copper plated Passed to 007 Small crack on the inside globe cracks not get a vacuum

808	8.000	6.970	Mch 7	6	One fifth of Slide with a paper index.
809	250		7	6	2 Small Trees .015 Pencil paper pressed to 207 on as broken plate.
810	259		7	6	Same as Above

(Book No. 41. contains records of lamps up to No. 973, the larger part of which are described as of cardboard slides.)

Samples

March 8th 1880
Chas Bartlett
M M Fries

8H1 Cab 134, Book 70
Manilla fibres - not finished - sides
copper plated.

8H2 Cab 129, Book 70
Palmetto leaf fiber - copped

8H3
8H4 Palmetto leaf copped.

8H5 Cab 145
Tree fibers

8H6
8H7 Wire grass from Florida
copped

Bar iron at top.

Book No 57 page 9 - (part)

Lamps

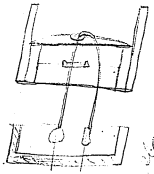
848
849 Palmetto leaf like cobbed

850
851
852
853 Small cob soaked in starch and H.2.O. and pressed cast iron.

854
855
856 Palmetto leaf cobbed

(large sections of Book No 57 devoted to carbon lamps with frequent descriptions of "cobbed" by Mr. Bachelor

Book No. 125 page 149



for raising the frame in doing w.w.

Dec 18 Different Ways for clamping carbons for plating

Edisons suggestion

Not satisfactory

Edisons Sug.

Not tried.

CC

Book No. 70 page 162.

Lamps

Feby 23. 1860
Chas B. Stratton

727 Carb Eds 74 – Bast-fibre –
Paper ends coated in black sugar

728 Large loops – New orleans sol
high R 312 times –

729 large loop – sugar in with
No. 2 solution

730 One large loop copped ends

Book No. 70 page 182.

March 4, 1880

Make thin bass fibres coated with plumbago and sugar and copper plate the ends

---

Have Geo. copper plate the carbons

(Batchs writing)

806

This I found broken in glass house
I think by not washing
the copper plating solution in it has
broken out where the deposit was
C. B.

Book No. 70 page 187

Lamps Mch 6th 1880

805 Small loop copper plated
15m - paper pressed to 7m
clamps heated on pumps and
broken

806 Small loop - copper plated -
- x .015 paper pressed to .007 -
Broken in glass blower

807 Small loop - copper plated
.015 paper pressed to .007
Small crack on inside globe
cannot get vacuum

808 One fibre of jute twist
copper end ends
8000 ohms

(Bertis writing)

No. 70 page 190.

Lamps 809 / 810 } 2 small loops - .015 wire open pressed to .007 - ends copperplated

811 Manilla fibre - ends copperplated
812 - Carb exp. 122 -

813 / 814 / 815 } 2 small loops .015 wire open pressed to .007 - ends copperplated

816 Jute fibres. Number - (carb 126) copperplated.

(Batch writing)
(to lamp No. 810 and near end of book a number of lamps are described as plated)

E.S.I. July 5 1888

Made a very dilute solution of Nitric acid got six elements of Bichrom battery, made took a paper car. in clamps and put the battery on to it in being first put in the solution. In the evening I went to look at it, I found that it was broken how I dont know, I noticed that one of the clamps was black, I put a new carbon in again (12) and set the battery to work again in it In the morning (July 6) I look at it again and there was a thick deposit ~~on the~~ on one of the clamps (the zinc end)

No 10 K page 3

Ep 2

Made a dilute solution of copper sulphate & took a carbon in clamps and put it into it and put one cup of Daniels on it, let it work all night and in the morning there was a deposit on the carbon as shown in the figure

I also have succeeded in plating these ends with copper nickel & other metals, which serves to make a secure contact between the clamps and the ends, I effect the deposit by hanging the loops upon a wire which is connected to one pole of a battery & allowing the ends of the loops to dip in the plating solution the proper distance, the jar containing the plating solution being in contact with the other pole of the battery.

(Mr Edisons writing)

(Copied in Caveat Book about Feby, 50)

From Mott's Records. Mch 15 1880 77

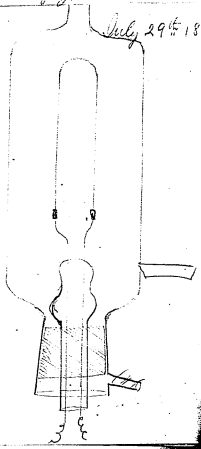
Geo. Carman plating loops in the Laboratory — from same Dec 17 77 21 plating commercially at the Lamp factory —

References on Equalizing the Resistance of carbons
Marvin & Edison.

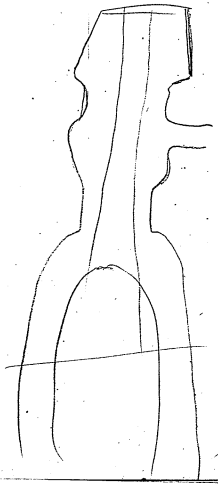
Book No. 68, page 175

July 29th 1880

Part No 1 of carbon lett-apts
Natural size
too large
E. M.



B



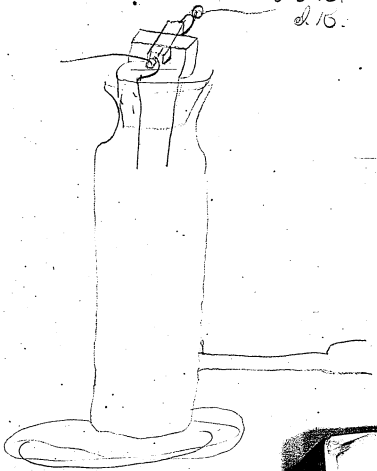
(No data in book, previous and subsequent data in book Feb 22, 79).

No. 22 page 27.

March 20. 1879

T.A.E.

d 16.



Book No. 42 page 51. (part)

passing vapors of Hydrocarbons or carbonizable gases through Hot tube to build up by deposit

(Mr. Edison's writing, probably Jany or February 1880)

Book No. 112 page 37

July 24.80

Lamp No 1323

Heated to white in Kerosene

16 candles

107 = D.
35.6

12.58 ohms

67.5 inches

126 = D
4

5.41 6290
3800
10.090 ohms

5.55 Took off current

No. 112 page 39

No 1323

80
26 2/4
53/4

1 ar

Kerosene oil lamp.
8 candles

937

65 7/10 inches

1314
1116

6290
2150
8440

No 112 page 41

No 1323 Thos A Edison
July 26. 1880

9.48 Could not measure
very easily but
estimated 350 candles

7.2 ohms

160

53.3 Volts

10-1 Went at top of carbon
13 minutes

Book 112 page 42

Bast No 1324

Incandescent for a short time in oil

J. A. E.

Book 137 p 53

Resistance cold 135.4 ohms

16 candles

86.9 ohms

716 volts

2620 ft. lbs.

12.5 per H. P.

Book No 112 page 45

No 1326 July 26, 1880

3.2 48 candles T.A.E.

6290
6290
3720
16200

51.5 ohms

83.3 Volts

3760 ft lbs

8.75 per H.P.

3.37 ~~Electric~~

Electric machine

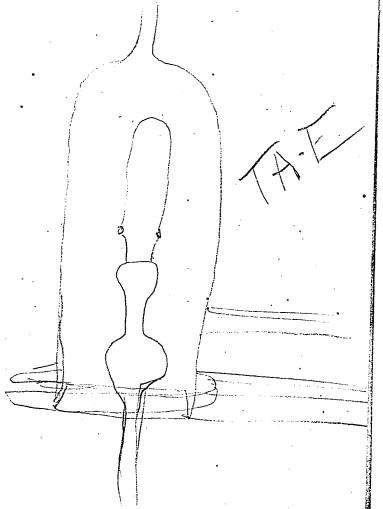
35 minutes

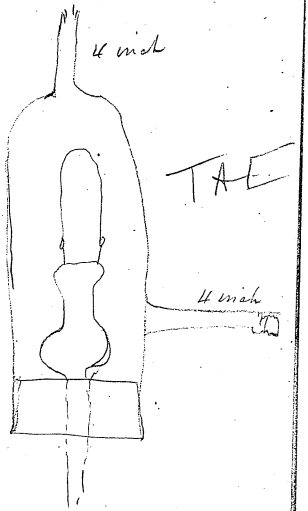
Page 117

No 1324

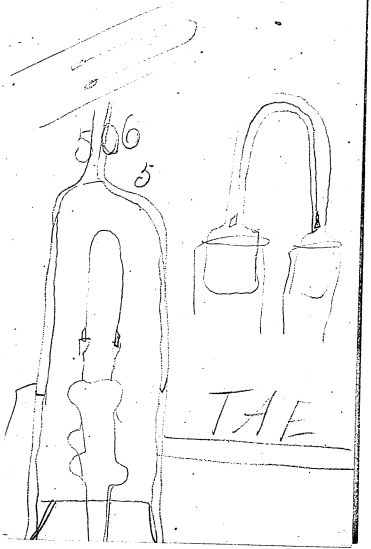
45.3
52.87

Started T.A.E.


T.A.E


4 inch
TAE
4 inch

Bond No 112 page 283.

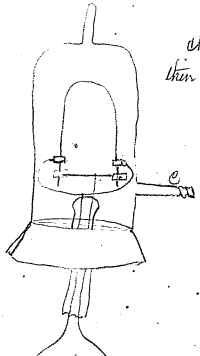


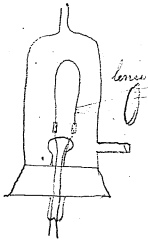
Patent-

Ref-267880

T. A. E.
Chas A Bartlett

Steam first
then a volatile paraffin





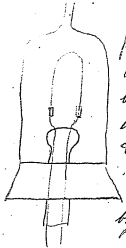
using a heliostat on the
arc,

Sun may be put on at
lower end & focus pushes it

Caveat

Oct. 25, 1880

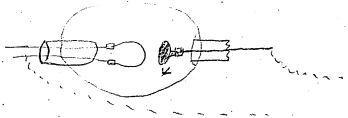
T. A. E.
Geo. B. Matthews



platinum nickel cobalt or other infusible metal brought to incandescence in a carbon vapor & carbon deposited on it. Then stripped off & it may be covered by plating the metal,

Caveat

Cat 25,840
Chas Batchelor



induction spark and heating temp. same time – vapor of volatile paraffin in tube in carbon X soaked in tar –
Electrical carrying coals carbon

Carbonize under pressure

See Sci Research – 5 page 132 –
Date previous to Feby 1.50

References for Field from separate sources of electricity and Regulating the field by Resistances &c

Book No. 4 pages 105 + 107

"The Gramme machine was then used to run the magnet and a fearful pulling was the result as nearly all the current was short circuited"

"Ex. No. 52 Feb 16. 1879

With one man power, Marston, as fair arc could be obtained from carbon points, a foot of .001 In. It was heated.

The commutators were connected so that the current had to pass through four coils, large sparks were obtained outside the battery being used to make the field magnets"

Book No. 4 page 111

"Ex 5-3.

The battery current was put from the top to the bottom commutator sides of the Gramme and the ring revolved. No current ever very little from the sides. Perhaps if the battery current were sent through a different set of wound coils"

Book, No. 8, page 119

"Ex Put the Gramme through the magnet and test at E.M.F. also without magnet in circuit. "

No Ex

Circuit closed March 17, 1879

"R is the field magnet which may be supplied with energy from the Ring or from an external source"

Page 101-

"The operator now restores the Resistance and commences to insert resistance until the power of the magnet is so weakened" &c

Page 102 Suggests turning the brushes on the commutator to reverse the strength of the current

Exp Research 5 pages 107.
Caveat Aug 7 1879

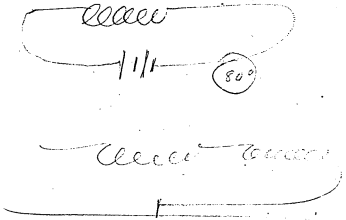
Mentions several ways & means of governing the electromotive force of machines.

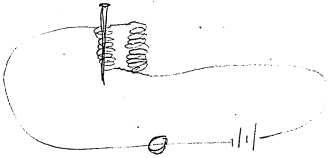
Page 128
Caveat dated Dec 19 1879

"In energizing the field magnets of the subsidiary generator I use a dynamo electric machine, the current from which passes through the field magnets of the subsidiary generator either in series or in multiple arc, in this circuit I place a large number of resistance coils of large wire and subdivided so that each has say 1/50 of the total, a wire between each resistance coil leads to a rotary commutator which in turning short circuits a greater or lesser number of resistance coils thus increasing or decreasing the strength of the current in the field magnets etc

"Running #50 Gramme Machine Eo with Batteries page 13

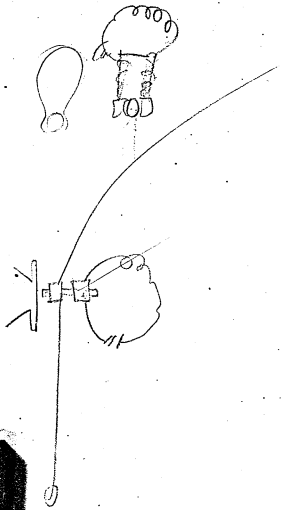
Current diagram





80'

About Dec 20th to Jan 1, 79
the date at heading is wrong as
L is 20.78, prior [illegible]
date in book Jan 10.79



Patent Office Gazette Vol 7. P. 367
Edison's Patent No 160,405. ~~[illegible]~~
Filed July 29. 1873

The speaking Telephone Invention
Page 2 V. Application No. 1[illegible]
Resistance in wire of Magnet 15.

Also same Exhibit - 32 V
" " " 39 V
Magnet - 75 - 3rd Patent
Pat No 203,011 Apr 30. 1878
All same both.

T. A. E. H. S. Patents.

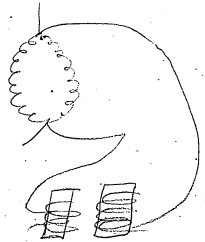
No. 147,311 Feb. 10, 1874.
" 150,846 May 12, 1874.
" 160,405 Mch 2 1875.

Bill Boots (Menlo Park)

1 – 9 in Electrical Machine
$750 from Wheeler & How.
October 7th 1878.

Book No. 145 – Page 38.

May 13. 1879 J. Ile



Book No 77. Page 1 etc. June 16, 1879

Results from Book 8 Page 91. Small Edison dynamo probably 1120

8 ohms total 120 Volts

Circuit open 9.75

50 ohms 27.7 P.94.

After bringing up field by short-circuiting 54.4 Volts

30 ohms 42.6 Volts

20.5 ohm 84.9

11.2 " 116

10.2 " 114

7.25 " 111

Examine on field

15.35 ohms.

123 Volts

Book No 77 Page 3 —
(Same date)

New Machine Gramme on field

on field	E.M.F.	R.
11 webers	50.5 Volts	9.1 ohms
11	50.4	7.7 "
8.55	45.7	

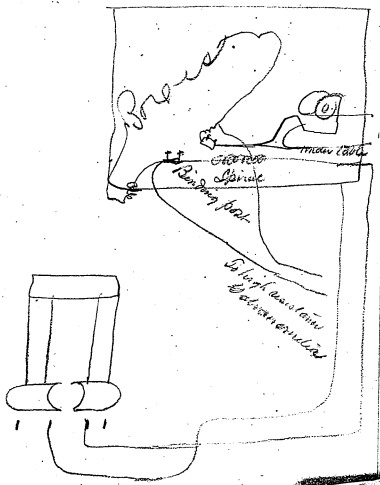
Running its own field

On 6.3 Ohm	59.3	B 2.18
6.35	63.5	
6.3	62	

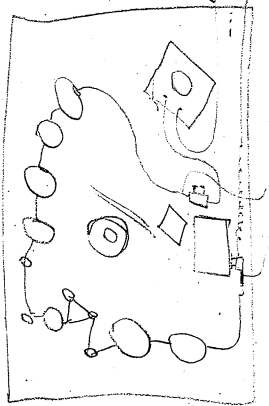
References as above on a number of consecutive pages in Book No 77 - from page 1 —

Book No 77. Page 185

Rotary Lashing Machine



Book 77 Page 116 Catt Cost Sum 7,8



[ITEM FOUND IN BOOK]

Sam

Please send me the date the Wallace Machine was received at Menlo, by Saturday or write me, that I may go out to search for it myself, before the 11th

Yours

C. P. Mott

Desk Dynamo
Book 25 - page 13 = 14 = 15 -

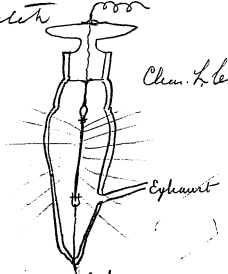
No 28, p 82 -
No 13 p 8,

Ground Glass
Vol 22 p 27 - 29

THE EDISON ELECTRIC LIGHT CO.,
65 FIFTH AVENUE.

New York, ... 188

Mr. Edison, I devised the lamp with ground stop cock on Feb. 15 1880 and tried the first experiment with it on Feb. 26th, The construction was as per sketch



[ITEM FOUND IN BOOK]

October 7th 1878
1 - 9 in Electric Machine
$ 7 50.
Wallace and Sons
Bill Books

C. L. Clark
Thomas Clark deal.

[ITEM FOUND IN BOOK]

Weston
Edison 25

Disc connections from transits to commutator
Statement – due July 26 1881

Clarke July & Aug 1880, says Mr E made a sketch antedating him two or three weeks
Mr Barstow says Mr W Co made a machine in 1879.

Book No 7 pgs 117, 119, 125 – No 2 p 39. No 1 p 49 No 20 p 206, No 23 p 69 etc. No 20 p 19, 33 etc – No 15 p 46. No 11 p 017 etc – No 28 p 11 etc – No 11 p 69, 117, 118 – No 10 p 172 etc – 207 – 217 – No 11 p 31, 103 – 12 p 119 – Order book No 1 refers to Note Book No 2 (not found) for a number of machines made in 1879.
No 13 p 8 etc, 39. No 11 p 147, 152, 205 – No 15 p 90 – No 25 p 13 (over) 15 etc – No 26 p 156 – ~~Disc~~ No 29 p 125 – No 14 p 19